

Hon. Robert J. Bryan

IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WASHINGTON
AT TACOMA

STATE of WASHINGTON, the PUYALLUP
TRIBE OF INDIANS, and the
MUCKLESHOOT INDIAN TRIBE,

Plaintiffs,

v.

the UNITED STATES OF AMERICA,

Defendant.

Civ. No. 06-05225RJB

DECLARATION OF
ROBERT J. WOLOTIRA, JR.

IN SUPPORT OF
MOTION TO ENTER CONSENT DECREE

1. I am Robert J. Wolotira, Jr., and I make this Declaration in support of Plaintiffs' Motion to Enter the Consent Decree in the matter of State of Washington, et al., v. the United States, Civ. No. C06-5225RJB. By this Declaration I am explaining the process used to allocate liability to the United States for natural resource damages relating to the Hylebos Waterway for the purpose of the settlement proposed in the Consent Decree.
2. I received a BS in Fishery Biology from Michigan State University in 1966, with emphasis on chemistry, invertebrate biology and limnology/oceanography, and a MS in Marine Science from the University of Washington in 1984, majoring in statistics and population modeling.

- 1 3. I am currently a retired federal government employee working as an ecologist on
2 contract with the National Oceanic and Atmospheric Administration (NOAA)
3 Restoration Center. From February 1994 - February 2007, I was employed by
4 NOAA as a Damage Assessment Specialist. I worked in what is now the
5 Assessment and Restoration Division (ARD) of the Office of Response and
6 Restoration of NOAA's National Ocean Service. ARD assesses natural resource
7 damages resulting from hazardous substance releases and oil spills that injure
8 publicly owned or managed natural resources for which NOAA has been
9 designated as a trustee on behalf of the public. NOAA typically carries out natural
10 resource damage assessments in conjunction with federal, state and tribal co-
11 trustees. During the years mentioned, I was NOAA's chief scientist for the
12 Commencement Bay natural resource damage assessment.
- 13 4. I was responsible for managing the scientific and technical work that formed the
14 substance of the Commencement Bay natural resource trustees' ("Trustees")
15 proposal for settling natural resource damages claims relating to Commencement
16 Bay's Hylebos Waterway. I managed the efforts by contractors and fellow case
17 team members that developed the habitat equivalency analysis (HEA) model the
18 Trustees used to scale liability for settlement purposes. I also managed the efforts
19 that produced the original parcel-by-parcel liability allocation and the subsequent
20 intra-parcel party-by-party sub-allocations that are the bases on which the
21 Trustees have entered into settlements with individual potentially responsible
22 parties (PRPs) or groups of PRPs. The HEA model and the parcel-by-parcel
23 allocation process are described in detailed at a web site maintained by NOAA at
24 www.cbrestoration.noaa.gov/settlements/hylebos.html. I was personally
25 responsible for developing the allocation analysis upon which the proposed
26 settlement in this matter is based.

- 1 5. Studies by the Trustees and by contractors for potentially responsible parties
2 (PRPs) as part of the EPA-led cleanup process have documented that large
3 quantities of hazardous substances have contaminated extensive areas of Hylebos
4 Waterway sediments. The contamination was deposited in the sediments by
5 surface water or ground water flows that carried the contaminants from areas of
6 adjacent upland facilities where they have been spilled or dumped. Sediment
7 contamination also resulted from direct releases to the water from dockside work
8 or vessels (e.g., ship building, repair or demolition) or from bank sloughing of
9 contaminated soils. The Trustees' studies have demonstrated how the
10 contamination has harmed not only the organisms that inhabit the marine
11 sediments, but fish and wildlife that come into contact with the pollution or that
12 eat contaminated prey items. Because of the central role that the community of
13 organisms living in and on the sediments plays in the Commencement Bay food
14 web, the Trustees' damage analysis for settlement is based upon the areal extent
15 of sediment contamination, and the length of time over which the contamination
16 has been injuring natural resources.
- 17 6. The Trustees' HEA model quantified natural resource damage liability for the
18 waterway in terms of discounted ecological service acre-years, or DSAYs. The
19 Trustees used DSAYs as an ecological currency to facilitate negotiating
20 settlements that allow PRPs to develop restoration projects instead of paying
21 monetary damages. The Trustees considered the injuries resulting from the range
22 of hazardous substances in waterway sediments and calculated that all the
23 contaminants the Trustees could link to industrial and commercial operations on
24 and adjacent to the waterway have generated a combined loss of 1,526.77
25 DSAYs.
- 26 7. To reach settlements with individual PRPs, the Trustees also developed an
27 independent allocation of the total DSAYs among the various facilities along the
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Hylebos Waterway shown to have released hazardous substances. Trustee contractors reviewed publicly available documents obtained from EPA, the Washington Department of Ecology and the City of Tacoma public library to evaluate activities that took place at those facilities that resulted in the release or likely release of hazardous substances to the Waterway.

8. The Trustees' allocation contractors first identified each facility along the Waterway or potentially draining to the Waterway. A map of those facilities with the facility names used by the Trustees is attached is Attachment A. To be subject to the allocation, each facility had to meet a three-part test. There had to be evidence of a pathway or means for contaminants to travel from the site¹ to the waterway. There also had to be evidence of a site activity that was a likely source of a substance of concern or which released a chemical likely to exacerbate the impact of a substance of concern. Finally there had to be evidence of actual environmental contamination on-site or in adjacent sediments by the substance of concern.

9. For facilities that met the above requirements, the allocators used one of three approaches to apportion liability:

- (a) For most contaminants, the contractors were able to identify unique footprints of chemical contamination attributable to individual facilities. 100% of the DSAY losses determined for each such footprint were assigned to the associated facility.
- (b) Contamination from polycyclic aromatic hydrocarbons (PAHs)² and polychlorinated biphenyls (PCBs) was too widespread to allocate by

¹ Note that the Trustees used the terms "facility" and "site" interchangeably to refer to discrete properties or industrial or commercial operations subject to the allocation.

² A list of abbreviations for contaminants covered by the allocation is attached as Attachment 2.

1 discrete footprints. For these substances, the waterway was initially
2 divided into five segments. The total DSAY losses for PAHs and PCBs for
3 each segment was then allocated among facilities shown to have released
4 the substances to the segment. This allocation used a relative mass loading
5 approach, taking into consideration the size of each contributing facility,
6 the number of years over which activities generating the releases occurred,
7 and an activity index based on a relative ranking of activities with respect
8 to their potential to release either PAHs or PCBs.

9 (c) Finally, in the case of certain footprints of other contaminants (e.g.,
10 copper footprint CU4, chromium footprint CR8, etc.), the evidence
11 showed that two or more facilities contributed to the footprint. A relative
12 mass loading approach comparable to that used for PAHs and PCBs was
13 used to divide the DSAYs attributable to those footprints among the
14 contributing facilities.

15 10. Using one or a combination of the above approaches, the contractors assigned
16 DSAY liability to each facility subject to the allocation on a contaminant-by-
17 contaminant basis. The total DSAYs for all contaminants linked to a facility were
18 totaled to give a total liability allocation for the facility.

19 11. As part of the process of developing their allocation, the Trustees included review
20 and comment by three individuals familiar with the Commencement Bay
21 Superfund site, consisting of an EPA remedial project manager, a fisheries
22 biologist with the Washington Department of Fish and Wildlife, and an
23 independent consultant who had conducted preliminary PRP investigations.

24 12. In the case of the site identified by the Trustees as the AK-WA Shipbuilding
25 facility (formerly the Todd Shipyard, located at the mouth of the Waterway), the
26 facility was assigned the following listed DSAYs for the corresponding
27 contaminants:

Contaminant	DSAYs	Allocations
Arsenic (AS)	1.221	100% of AS13
Butylbenzyl phthalate (BBPH)	0.011	100% of BBPH17
Bis (2-Ethylhexyl) phthalate (BEPH)	0.771	100% of BEPH7 & BEPH8
Cadmium (CD)	0.108	100% of CD4
Chromium (CR)	2.861	100% of CR9 50% of CR8
Copper (CU)	18.363	100% of CU12
Diethylphthalate (DEPH)	0.020	100% of DEPH2
Dimethylphthalate (DMPH)	0.055	100% of DMPH4
Di-n-octyl phthalate (DOPH)	0.005	100% of DOPH6
Mercury (HG)	0.104	100% of HG14
Polycyclic aromatic hydrocarbons (PAHs)	366.652	26.67% of Segment 4 62.99% of Segment 5
Lead (PB)	0.078	100% of PB9
Polychlorinated biphenyls (PCBs)	41.027	8.62% of Segment 4 25.86% of Segment 5
Phenol (PNL)	0.126	100% of PNL1 & PNL2
Antimony (SB)	7.004	100% of SB15
Tributyltin (TBT)	9.548	95% of TBT12
Zinc (ZN)	7.262	100% of ZN11
Total	455.215	

The codes in the third column refer to identified contaminant footprints. Based on physical proximity and evidence of releases, most of the listed footprints were apparently tied to the AK-WA Shipbuilding site and 100% of each such footprint was allocated to the site. Liability for PAHs, PCBs, one chromium footprint (CR8) and one tributyltin footprint (TBT12) was shared with other facilities, and liability for those DSAYs was allocated using a relative mass loading process. A

1 similar contaminant-by-contaminant process was followed to determined the total
2 liability for each site subject to the allocation.

3 13. It is important to note that the Trustees' reporting of DSAY calculations to three
4 and four decimal places is not intended to imply that either the HEA model used
5 to calculate DSAY losses for the waterway or the process the Trustees used to
6 allocate those losses among facilities or parties have that level of accuracy or
7 precision. Re-analysis of the allocation done for any facility or party can, and
8 likely would, result in slightly different final numbers. As the Trustees have
9 negotiated settlements with additional parties at sites where some parties had
10 previously settled, the allocation calculations have produced figures differing by
11 as much as 1 to 2 percent. In addition, given the number of parties, facilities,
12 contaminants, concentration levels, habitat types, etc., addressed by the Trustees'
13 settlement model, it is likely that some level of transcription error may have been
14 or would be introduced into the calculations. However, the Trustees believe that
15 the range of outcomes from multiple re-calculations of a party's liability would all
16 be within a similar $\pm 2\%$ range, and that any value within that range would be a
17 reasonable settlement for that party. Any difference between multiple re-
18 calculations would be insignificant relative to the settling party's appropriate
19 share of liability for natural resource damages.

20 14. The Trustees initially allocated liability only among waterway facilities. A
21 number of facilities had had two or more operators or owners over the years who
22 apparently shared responsibility for the liability allocated to the facility. In those
23 cases the Trustees expected the affected PRPs to agree among themselves how to
24 sub-allocate the facility's liability. However, it soon became apparent that the
25 Trustees would have to undertake a second-tier intra-facility allocation in order to
26 reach settlements with those parties. This resulted mainly from the fact that not all
27 identified parties were part of the settlement negotiations process, either because
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1 some of the parties were defunct or otherwise not reachable or because not all
2 affected parties chose to participate in the negotiations.

3 15. The Trustees drew in part upon the remedial allocation report done by Matt Low
4 of TLI Systems, Inc. ("Low") to develop the facility sub-allocations. Low was
5 retained by a group of 36 Hylebos Waterway PRPs to allocate liability for
6 remedial investigation and cleanup costs among Waterway PRPs. Low's report
7 explains that his allocation involved a 5-year process of gathering information
8 from public sources, reviewing extensive factual disclosures by the parties,
9 conducting transcribed interviews of approximately 35 knowledgeable parties and
10 considering submitted position statements and oral arguments by the parties. The
11 Low report allocated costs among individual PRPs, unlike the Trustees' facility-
12 based NRDA allocation. Consequently, his analysis relied heavily upon
13 information about which parties were engaged in different activities at different
14 times. The Trustees evaluated Low's information and approach and determined
15 that, while it was not designed to address natural resource damages liability, the
16 information it contained was useful to the Trustees' sub-allocation process and its
17 approach could be adapted to meet the Trustees' needs.

18 16. Low's allocation of investigation costs is based upon a system of multiplying a
19 series of numerical scores, specifically a Release Magnitude (RM) score, a
20 Sediment Quality Objective (SQO) score, and the number of years of operation of
21 an activity. The RM score takes into account the nature and magnitude of releases
22 containing contaminants of concern. The SQO score takes into account the
23 number of categories of SQO chemicals associated with the activity in question
24 and the severity of the chemicals identified in soils on the site or in potential site
25 pathways. The RM and SQO scores Low assigned necessarily involve some level
26 of subjective judgments. However, in the absence of any obvious way objectively
27 to compare different operations and releases, and given the fact that the Low
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report has been accepted by many PRPs, it seemed a reasonable point of departure for developing facility sub-allocations.

17. The Trustees used Low's RM and SQO scores, except where noted. Low's report only addressed years of operation through 1998; the Trustees' analysis includes the years through 2003. Like Low, the Trustees multiplied the RM score, SQO scores and years of operation to develop a total score per party. Where the ownership and operation of a facility were split between different parties, the Trustees followed Low in dividing the RM score 80:20 between the operator and the owner. The party totals per facility were summed, and the percent that each party's score bears to the total facility score was calculated. That party percent was multiplied times the DSAYs assigned to the facility for each substance of concern (SOC) with which the party was involved. The total of DSAYs thus assigned to a party for all SOCs was summed for a party-specific site DSAY suballocation.

18. The United States was apparently involved at six different Waterway facilities that are addressed by this settlement: the AK-WA Shipbuilding Site, the Occidental Chemical Site, the U.S. Naval Reserve Site, the US Gypsum Site, the General Metals of Tacoma Site, and the Kaiser Aluminum Site. The Trustees allocated a share of liability to the United States at each of those sites. The following discusses the suballocation approach on a site-by-site basis for those sites.

19. AK-WA Shipbuilding Site

(a) The site was allocated 455.215 DSAYs and \$2,626,290.87 in damage assessment costs. The U.S. Government's sub-allocated share is 186.5242 DSAYs and \$1,076,121.60 damage assessment costs.

(b) As detailed above in paragraph 10, the Trustees allocated a total of 455.215 DSAYs to the site. Sub-allocating that liability among parties responsible for site

1 operations requires a detailed examination of the history of site ownership and
2 activities.

3 (c) The predecessor of Todd Shipyards built a shipyard on the site (plus a portion of
4 what is now Site 57 - Occidental) in 1917 as part of the World War I shipbuilding
5 effort. Following the war Todd used the site for building non-military vessels.
6 The yard operated from 1917 to 1925, at which time all operations at the site
7 ceased and the yard was dismantled. Todd subsequently sold 10.5 acres of the site
8 to Hooker Chemical (Occidental's predecessor). The site was apparently dormant
9 from 1925 to 1939.

10 (d) In the buildup toward WWII, Todd rebuilt the shipyard in late 1939 - early 1940
11 and began constructing vessels first for the Maritime Commission, then the Navy.
12 Todd constructed and launched a total of 74 warships under U.S. oversight
13 between the rebuilding of the shipyard in 1939 and the time shipbuilding ceased
14 in 1945.

15 (e) Shipbuilding ceased after the war. In 1946 the site was designated part of the U.S.
16 Naval Station, Tacoma. In 1948 the United States purchased the Todd shipyard
17 property for use by the Navy. The Navy carried out ship berthing, maintenance
18 and repair and deactivation at the site during the period 1948-1960. Site activities
19 may have included dismantling and retrofitting of Liberty and Victory ships from
20 about 1946 to 1948. The site was declared excess in 1958 and sold in 1960 to the
21 Port of Tacoma.

22 (f) Zidell Dismantling leased a portion of the site from the Port from January 1960
23 through May 1984. Zidell used the site for ship dismantling from 1960 to the mid-
24 1970's, and barge building from the mid-1970's through 1983. Many of the
25 dismantled ships were reportedly Navy vessels.

26 (g) Tacoma Boatbuilding leased a portion of the site for boat building operations
27 between 1969 and 1987. Given the overlapping dates with Zidell's operations, it
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1 is presumed that the two companies were using different portions of the site.

2 (h) AK-WA Shipbuilding leased a portion of the site between May 1986 and
3 approximately 1998 to conduct ship maintenance and repair activities.

4 (i) Trident Seafoods currently berths a fleet of fishing and seafood processing vessels
5 on the site under a lease begun in 1997. Trident uses the site for maintaining and
6 repairing boats and equipment, and outfitting the vessels for fishing voyages.
7 Without further information to go on, the Trustees have assumed that the facility's
8 operations under current permitting and regulatory regimes do not contribute
9 appreciable amounts of contamination to the waterway sediments.

10 20. Because of the complex site history, the suballocation analysis was performed on
11 a year-by-year basis. The Trustees first multiplied Low's RM and SQO scores for
12 each party at this facility to generate a RM*SQO score per year. The Trustees
13 adopted Low's decision to split the RM score 50:50 between the Navy and Todd
14 during WWII, and 32:48:20 between the Navy, Zidell and the Port for the ship
15 dismantling activities between 1960 and 1975. (The latter ratio results from
16 dividing the 80% operator's share of the RM score between the two operators
17 based on years of operation.) The RM*SQO product for each party for all years of
18 the activity are summed and the resulting total score is assigned to each SOC
19 associated with the activity. A party is allocated a percentage of the liability for
20 each SOC based upon the relation of the party's summed total scores for the SOC
21 to the total of all parties' scores. The party's percentage liability for each SOC is
22 multiplied times the DSAYS for the SOC footprint, portion of SOC footprint, or
23 share of the relevant segment (in the case of PAH and PCB) that is assigned to the
24 facility. This results in a DSAY allocation per site party per SOC. The total of the
25 DSAYs allocated to each party for all SOCs is summed to determine the party's
26 total DSAY liability for the facility. To allocate the damage assessment cost
27 liability, each party is assigned a share of the facility's assessment costs allocation

based upon the party's percentage liability for the facility's total DSAYs. The total DSAYs and damage assessment costs attributable to the AK-WA facility are thus sub-allocated among the parties as follows:

Party	DSAYs	Percentage	Assessment Costs
U.S.	186.5242	40.97%	\$1,076,121.60
Todd Shipyards	54.7731	12.03%	\$316,004.66
AK-WA Ship Building	34.5426	7.59%	\$199,288.02
Zidell Dismantling	84.3247	18.52%	\$486,497.90
Tacoma Boat Building	42.2627	9.28%	\$243,827.90
Port of Tacoma	52.7878	11.60%	\$304,550.79
Totals	455.2151	99.99%	\$2,626,290.87

The sub-allocated shares total less than 100% due to the effects of rounding.

21. The operation of the sub-allocation for the AK-WA Shipbuilding site can be illustrated using the SOC chromium (CR) and the sub-allocation to the Navy. Paragraph 10 above explains the how DSAYs for CR were allocated to the site (2.861 DSAYs).

Three different combinations of RM and SQO scores are used for the Navy reflecting differing activities and contaminants and different party relationships over the years as follows:

<i>Activity</i>	Ship construction	Ship construction & dismantling	Ship dismantling
<i>Potential contaminants</i>	metals, organics, PAHs, PCBs	metals, organics, PAHs, PCBs	metals, organics, PAHs, PCBs
<i>Years</i>	8 (1940-1947)	12 (1948-1959)	16 (1960-1975)
<i>RM score</i>	25	50	16
<i>SQO score</i>	15	15	16
<i>RM*SQO score</i>	375	750	256
<i>RM*SQO*Years</i>	3,000	9,000	4,096
<i>Remarks</i>	RM reflects 50:50 split with Todd		RM reflects 32:48:20 split with Zidell, Port
<i>RM*SQO*Years total all activities</i>	16,096		

The product of RM score \times SQO score \times Years is calculated for each party for all activities involving CR, and a party percentage for CR is derived. The percentage is multiplied times the DSAYs for CR allocated to the site to give a party share for those CR DSAYs as indicated in the following table.

Party	RM*SQO*Years for all activities	Percent of Total	Share of CR DSAYs (2.861)
U.S.	16,096	43.01%	1.2305
Todd Shipyard	4,800	12.83%	0.3671
Zidell Dismantling	6,792	18.15%	0.5193
Tacoma Boat Building	3,009.6	8.04%	0.2300
AK-WA Shipbuilding	2,600	6.95%	0.1988
Port of Tacoma	4,124.4	11.02%	0.3153
Totals	37,422	100.00%	2.861

A similar process was followed for all involved parties for each of the contaminants attributed to the site.

22. Occidental Chemical Site

- (a) This site, adjacent to the AK-WA site, also has a complex history, further compounded by the fact that it was treated as two separate parcels (one of which itself is composed of two tax parcels) in the Low allocation analysis. Hooker Electrochemical Company, predecessor to Occidental Chemical Co., acquired 20.889 acres (the southern two-thirds of what Low identified as Parcel 2) in October 1928. Occidental began operating a chlor-alkali plant in February 1929. In 1937 Hooker/Occidental purchased the rest of Parcel 2 (the northern 10.5 acres) from Todd Shipyards. In addition to the chlor/alkali plant, the facility also included an ammonia plant, a muriatic acid plant, and a calcium chloride plant. Chemicals manufactured include sodium aluminate and aluminum chloride. Hooker and Detrex Corporation operated a joint venture on the site to produce trichloroethylene and tetrachloroethylene cleaning solvents from 1947 to 1956; Hooker continued producing the solvents until 1973. Occidental sold the Parcel 2 operations to Pioneer Chlor-Alkali Company in 1997. Some waste from the

Occidental operations were also deposited on the area Low identified as Parcel 3. The predominant uses of Parcel 3, originally owned by Fletcher Oil Co., were operation by various parties (Fletcher, PRI Northwest, Tesoro Petroleum and United Independent Oil) at different times of bulk petroleum storage and distribution facilities. A tetraethyl lead plant was also operated for a short period on the parcel by United Independent Oil and later by PRI Northwest. The Navy was reported to have berthed ships at the Fletcher Dock on Parcel 3 from 1946 to 1960 as part of the U.S. Naval Station, Tacoma operations.

- (b) Low's analysis reports that the U.S. through the Defense Plant Corporation was the owner and possible operator of an aluminum chloride plant on Parcel 2 from 1942-1946. In addition, it appears that the WWII-era Todd Shipyards expanded to occupy the northern portion of Parcel 2 (apparently the portion of the parcel that had been sold by Todd to Hooker in 1937). Low reports that during the war years the shipyard used areas of the shoreline along Parcel 2 for waste disposal and incineration.
- (c) The site was allocated 241.261 DSAYs and \$1,391,941.80 in damage assessment costs. The U.S. Government's sub-allocated share is 4.7327 DSAYs and \$27,286.13 in damage assessment costs (Defense Plant Corporation Share 0.4659 DSAYs and \$2,686.12 assessment costs, U.S. Navy Share 4.2668 DSAYs and \$24,600.01 assessment costs).
- (d) The site allocation is based on 100% of unique footprints of several contaminants (SB13, SB14, CR7, CU9, CU10, CU11, MDCB6, MDCB7, PDCB1, HCB6, HCB12, PB7, PB8, HG10, HG12, NI12, NI13, PCP1, TBT11, TCB3, ZN9 and ZN10) and 50% of footprint CR8. The site is also allocated liability for PCB (17.24% of the losses in Segment 4 and 51.72% of the losses in Segment 5) and PAH (5% of the losses in Segment 4 and 11.81% of the losses in Segment 5).

23. Because separate portions of the site were used in different fashions by the various parties, the Trustees multiplied the product of RM, SQO and years of operation by the area (in acres) for the activity involved to do the sub-allocation. As with the AK-WA site, the Trustees applied Low's 50:50 split of the combined score for the shipyard operations between 1942 and 1960 between Todd and the Navy. The RM*SQO*Years*Acres scores for each party are summed and the resulting total score is used to allocate each SOC footprint associated with the activity. The remaining steps of the analysis mirror the process used for the AK-WA facility to derive a DSAY total for each party. The total DSAYs and damage assessment costs attributable to the Occidental facility are thus sub-allocated among the involved parties as indicated in the following table:

Party	DSAYs	Percentage	Assessment Costs
U.S.	4.7327	1.96%	\$27,286.13
Todd Shipyard	4.1584	1.72%	\$23,975.04
Occidental	231.8112	96.02%	\$1,375,790.25
Fletcher Oil	0.4979	0.21%	\$2,870.62
PRI Northwest	0.1425	0.06%	\$821.58
Tesoro Oil	0.0641	0.03%	\$369.57
United Independent Oil	0.0214	0.01%	\$123.38
Total	241.4282	100.01%	\$1,431,236.57

The sum of the DSAYs sub-allocated among the parties for the facility differs slightly (241.428 vs. 241.261) from the total DSAYs originally allocated to the facility, and the sub-allocated shares exceed 100%, due to the effects of rounding coupled with artifacts of the Excel spreadsheet program in copying data between worksheets. In addition, the assessment cost allocation to Occidental includes costs specific to the company that were not allocable to other parties. Hence the

1 sum of the assessment costs sub-allocations exceed the figure allocated to the
2 facility.

3 24. U.S. Naval Reserve Site

- 4 (a) This site is complicated by the fact that the NRDA allocation site boundaries
5 encompass an area that Low treated as three different parcels, composed of
6 property currently owned by the U.S. Navy plus a Port of Tacoma warehouse
7 property (Low allocation Parcel 4). Apparently undeveloped before WWII, the
8 site appears to have been put to use as part of the Todd Shipyard expansion
9 during the war. The site was purchased by the United States for use by the Navy
10 in 1943 and it, along with the property purchased from Todd Shipyard and others,
11 was designated Naval Station Tacoma. The balance of the Naval Station (with the
12 exception of the current site) was declared excess in 1958, and was sold to the
13 Port of Tacoma in 1960. Naval Station activities on the site apparently included
14 ship berthing, shipbuilding and repair. The pier area was used as a commissioning
15 dock and portions of the site were also used for training.
- 16 (b) In December 1982, Naval Reserve Maintenance and Training Facility (NRMTF),
17 Puget Sound, became a tenant on the site. NRMTF operated a repair barge and an
18 oily waste barge. The repair barge was moved offsite in 1988. In 1994 hazardous
19 substances and petroleum products were removed from the oily waste barge; it
20 was declared excess and moved offsite in late 1994 or early 1995.
- 21 (c) The portion of the site now occupied by a Port of Tacoma warehouse (Low
22 allocation Parcel 4) contained four large storage tanks as early as 1936. This area
23 was sold to H.D. Maxwell in 1942, with possession apparently transferring in
24 1944. Prior to that time, Fletcher Oil Company is believed to have used the
25 storage tanks and have received petroleum by barge and truck. From 1944 to 1951
26 Maxwell leased the storage tanks to General Petroleum Corporation. In 1951, this
27 area was sold to the United States. The Navy subsequently used the property for
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1 storing aviation fuel. After this portion of the site was sold to the Port, the storage
 2 tanks were leased for storage of petroleum products to FOF, Inc. (apparent
 3 successor to Fletcher Oil) from 1972 to 1980, and to PRI Northwest for 5 years
 4 (apparently 1980 to 1985 when PRI Northwest discontinued operations on
 5 neighboring Parcel 3).

6 (d) The warehouse on the balance of remedial Parcel 4 was built by Naval Station
 7 Tacoma and the property was used by the Naval Station as a shipyard and
 8 industrial area. Parcel 4 was included in the sale to the Port of excess Naval
 9 Station property in 1960. After being sold to the Port, this portion of the site has
 10 been occupied and used by several tenants. Tacoma Boatbuilding apparently
 11 occupied the area for up to 10 years, leasing part of the warehouse to store boat
 12 parts and possibly doing boat refurbishing work on site. Several other tenants
 13 have leased all or part of the warehouse at various times.

14 (e) The site was allocated 45.866 DSAYs and \$264,616.46 in damage assessment
 15 costs. The U.S. Government's sub-allocated share is 31.2555 DSAYs and
 16 \$180,323.15 in damage assessment costs (U.S. Air Force share 9.6439 DSAYs
 17 and \$55,638.80 in assessment costs, U.S. Navy share 21.6116 DSAYs and
 18 \$124,684.35 in assessment costs).

19 (f) The site allocation is based on 3.33% of the PAH in Segment 4, 7.87% of the
 20 PAH in Segment 5, and 100% of footprint CU8.

21 25. The Trustees employed a similar approach to that used for the Occidental
 22 Chemical site to sub-allocate among the parties the liability for PAHs allocated to
 23 the facility (i.e., using the product of $RM \times SQO \times Years \times Acres$). The facility's
 24 liability for the CU footprint was allocated 100% to the U.S. because the U.S. was
 25 the only party involved in site activities triggering for the related CU footprint
 26 (ship berthing). The Trustees did not attempt a complete sub-allocation among
 27 various U.S. agencies. The total DSAYs and assessment costs attributable to the
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Naval Reserve facility are thus sub-allocated among the parties as follows:

Party	DSAYs	Percentage	Assessment Costs
U.S.	31.2555	68.15%	\$180,323.15
Fletcher Oil Inc.	1.3562	2.96%	\$7,824.36
PRI Northwest	0.7534	1.64%	\$4,346.61
Lilyblad Petroleum	1.5069	3.29%	\$8,693.80
Port of Tacoma	10.9941	23.97%	\$63,428.54
Total	45.8661	100.01%	\$264,616.46

26. US Gypsum Site

- (a) The U.S. through the Defense Plant Corporation (whose successor is the General Services Administration) built a calcium carbide plant on this site in 1942 and leased it to Pacific Carbide & Alloys Co., who operated the plant until 1946. Feltrock Insulation Co. manufactured rock wool on the site from 1947 to 1952. In 1952 the site and plant were sold (presumably by the Reconstruction Finance Corp., which apparently reabsorbed its subsidiary Defense Plant Corporation in 1945) to American Rock Wool Corp., who owned and operated the rock wool plant from 1952 through 1955. The site appears to have been inactive between 1956 and 1959. USG Interiors owned the site and operated the rock wool plant from 1959 through 1996. Thermafiber LLC (formerly American Rock Wool) purchased the rock wool plant in 1997 and has operated the plant since then. Murray Pacific operated a log sort yard on a 4.6 acre portion of the site from 1970 through 1986. Murray Pacific acquired this portion of the site in 1992 and conducted cleanup operations through 1996.
- (b) The site was allocated 21.099 DSAYs and \$121,729.42 in damage assessment costs. The U.S. Government's (Defense Plant Corporation) sub-allocated share is 1.7011 DSAYs and \$9,814.21 in damage assessment costs.
- (c) The site allocation is based on 100% of footprints CU3, PB2 and ZN4, and 75%

each of footprints SB6, AS9, and CR2. The site is also allocated liability for PAH (1.68% of the losses in Segment 1, 4.39% of the losses in Segment 2 and 2.84% of the losses in Segment 3).

27. The Trustees followed the same sub-allocation approach for the US Gypsum site, also considering the acreage of operations as with the previous two sites. The Trustees' analysis differs somewhat from Low's in that the Low analysis did not identify Pacific Carbide, American Rock Wool or Feltrock Insulation as PRPs. The Trustees also determined to split the RM score 50:50 between the Defense Plant Corporation and Pacific Carbide and Feltrock Insulation, based on site operations during the period of Defense Plant Corporation ownership of the site. The RM*SQO*Years*Acres score per activity per party were calculated, the scores summed for each party for all years and activities, and a site percentage for each party is calculated based on the ratio of the party's score to the total of all parties' scores for the facility. These percentages are used to sub-allocate among the parties the liability for all SOCs allocated to the facility. The total DSAYs attributable to the site are thus sub-allocated among the parties as follows:

Party	DSAYs	Percentage	Assessment Costs
U.S.	1.7011	8.06%	\$9,814.21
Pacific Carbide	0.6419	3.04%	\$3,703.33
Feltrock Insulation Co.	1.0592	5.02%	\$6,110.88
American Rock Wool	1.6947	8.03%	\$9,777.29
USG Interiors	12.9862	61.55%	\$74,921.68
Murray Pacific	1.0251	4.86%	\$5,914.14
Thermafiber LLC	1.9912	9.44%	\$11,487.89
Total	21.0994	100.00%	\$121,729.42

28. General Metals of Tacoma Site

- (a) The site has been used for metal recycling, including vehicle crushing and ship

dismantling, since 1965. Former site owners Mr. and Mrs. Leslie Sussman (also doing business as SRS Properties, Inc.) formed General Metals of Tacoma and began site operations in 1965. The site was leased to General Metals of Tacoma and the Sussmans initially owned the majority of the stock in the company. In 1981 the Sussmans sold their interest in the business to Acme Trading and Supply Co. but retained ownership of the property and continued to lease it, through SRS Properties, Inc., to Acme/General Metals. In 1992 the Sussmans sold the property to General Metals of Tacoma. Schnitzer Steel purchased General Metals of Tacoma in 1993. Low's allocation also reported that Universal Metal Products operated on the site from 1970 to 1975. The Low allocation report states that the Navy arranged for ship dismantling at the site during 1972-1975.

(b) The site was allocate 110.158 DSAYS and \$635,539.93 in damage assessment costs. The U.S. Government's sub-allocated share is 2.7246 DSAYs and \$15,728.26 in damage assessment costs.

(c) The site allocation is based on 100% of unique footprints of several contaminants (AS5, BEPH2, BBPH6, CD1, CD2, CR1, DOPH2, HG3, and ZN2), 15% of the liability for footprint BBPH7 and 10% of the liability for footprint SB4. The site is also allocated liability for PCB (32.52% of the losses in Segment 1, 49.79% of the losses in Segment 2 and 27.49% of the losses in Segment 3) and PAH (8.40% of the losses in Segment 1, 21.96% of the losses in Segment 2 and 14.20% of the losses in Segment 3).

29. The Trustees' sub-allocation analysis for the site followed the basic pattern for the other facilities. In the absence of further information about the arrangements between the Sussmans, General Metals of Tacoma, Acme Trading and Supply Co., Universal Metal Products and Schnitzer Steel, the Trustees did not attempt to determine the relative suballocation among those parties for purposes of this

settlement.³ The Trustees adopted Low's 32:68 split of the RM score for the shipyard operations between the Navy and the General Metals parties for the years during which General Metals was dismantling ships for the Navy. The total DSAYs attributable to the site are thus sub-allocated among the parties as follows:

Party	DSAYs	Percentage	Assessment Costs
U.S.	2.7246	2.47%	\$15,728.26
General Metals parties	107.3380	97.50%	\$603,628.67
ASARCO	0.0317	0.03%	\$182.99
Total	110.0943	100.00%	\$619,539.92

The total differs from the 110.158 DSAYs shown in the Trustees' allocation reports for the facility due to rounding.

30. Kaiser Aluminum Site

- (a) The Defense Plant Corporation built an aluminum smelter on the site in 1941; it was leased and operated by the Olin Corporation from 1942 through 1946. In 1947 Permanente Metals (the corporate predecessor to Kaiser Aluminum and Chemical Co.) purchased the property and began operating the plant. With the exception of a closure between 1958 and 1964, Permanente/Kaiser owned and operated the plant until it closed permanently in 1999.
- (b) The site was allocated 109.749 DSAYs and \$633,181.93 in damage assessment costs. The U.S. Government's sub-allocated share is 7.3863 DSAYs and \$42,618.18 in damage assessment costs.
- (c) Because the facility's discharge point is located at the boundary dividing waterway segments 1 and 2, the allocation of facility liability treats the discharge

³For purposes of a subsequent settlement, in United States, et al., v. AOL Express, Inc., et al., Case No. C06-05204RJB, entered by the Court on June 16, 2006, the Trustees developed a further sub-allocation as between the Sussmans and General Metals of Tacoma.

as occurring half in Segment 1 and half in Segment 2. The allocation is based on 30.49% plus 8.13% of the PCB in Segment 1, 5.19% plus 12.45% of the PCB in Segment 2, 6.87% of the PCB in Segment 3, 31.51% plus 8.40% of the PAH in Segment 1, 9.15% plus 21.96% of the PAH in Segment 2 and 14.20% of the PAH in Segment 3.

31. The Trustees' sub-allocation for the site follows the basic pattern for the other facilities. The Trustees adopted Low's 50:50 split of the RM score for the plant operations between the Defense Plant Corporation and Olin for the years during which the Defense Plant Corporation was the plant owner and Olin the operator. The total DSAYs and damage assessment costs attributable to the site are thus sub-allocated among the parties as follows:

Party	DSAYs	Percentage	Assessment Costs
U.S.	7.3863	6.73%	\$42,618.18
Olin Corporation	5.2759	4.81%	\$30,441.39
Kaiser Aluminum	97.0767	88.46%	\$486,805.72
Total	109.7389	100.00%	\$559,865.29

The DSAYs total differs from the 109.749 DSAYs shown in the Trustees' allocation reports for the facility due to rounding. The total assessment costs figure is less than the amount allocated to the site as stated above in paragraph 30(b) because the Trustees credited Kaiser Aluminum with previous payments of assessment costs by the company.

32. The Trustees' first-level allocation assigned a portion of the liability for waterway DSAY losses to the Bonneville Power Administration (BPA) site. The allocation was based in part on the understanding that there had historically been a pathway to the Hylebos Waterway for surface water runoff from areas of the site where there was evidence of past contamination. During the negotiations that resulted in this settlement, the Trustees were given a report prepared by consultants for BPA

showing that the area in question had not drained to the Hylebos. The Trustees found the report's conclusions reasonable determined to waive their claims against BPA.

33. For all affected sites, the U.S. Government's liability is sub-allocated share of liability is as follows:

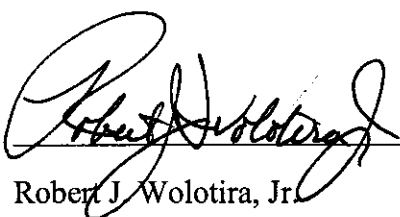
Site	DSAYs	Assessment Costs
AK-WA Shipbuilding	186.5242	\$1,076,121.60
Occidental Chemical	4.7327	\$27,286.13
U.S. Naval Reserve	31.2555	\$180,323.15
US Gypsum	1.7011	\$9,814.21
General Metals of Tacoma	2.7246	\$15,728.26
Kaiser Aluminum	7.3863	\$42,618.18
Total	234.3244	\$1,351,891.53

33. The Trustees initially quantified their natural resource damages claims using DSAYs as the ecological currency in order to facilitate settlement with parties willing to undertake restoration themselves under Trustee oversight. The Trustees recognized, however, that a number of parties may not wish to develop restoration projects but instead would prefer a cash-based settlement. For cash-based settlements the Trustees estimated what it would cost them, per DSAY gained, to develop habitat restoration and offered to settle on a dollar equivalent basis of \$52,000 per DSAY plus allocated assessment costs. Converting the above DSAY numbers to a cash settlement in this fashion produces the following U.S. Government liability:

Site	Liquidated Damages	Assessment Costs	Total Liability
AK-WA Shipbuilding	\$9,699,258.40	\$1,076,121.60	\$10,775,380.00
Occidental Chemical	\$246,100.40	\$27,286.13	\$273,386.53
U.S. Naval Reserve	\$1,625,286.00	\$180,323.15	\$1,805,609.15
US Gypsum	\$88,457.20	\$9,814.21	\$98,271.41
General Metals of Tacoma	\$141,679.20	\$15,728.26	\$157,407.46
Kaiser Aluminum	\$384,087.60	\$42,618.18	\$426,705.78
Totals	\$12,184,868.80	\$1,351,891.53	\$13,536,760.33

34. The above figures, \$12,184,868.80 in natural resource damages and \$1,351,891.53 in damage assessment costs, are the sums reflected in the Consent Decree.

I declare under penalty of perjury that the foregoing is true and correct. Executed on September 06, 2007.


Robert J. Wolotira, Jr.